

# Comparisons of Job Characteristics

**Focus Occupation:** [Mechanical Engineers \(17-2141\)](#)

**Associated Occupation:** [Electrical and Electronic Engineering Technicians \(17-3023\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

## Knowledge

Similarity of Focus Occupation to Associated Occupation: 82

**Focus Occupation:** Mechanical Engineers (17-2141)

**Associated Occupation:** Electrical and Electronic Engineering Technicians (17-3023)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Computers and Electronics	8.4	15.8	13.4	< Expanded education and/or training may be required
Engineering and Technology	5.7	12.4	21.5	>> Current knowledge level is likely more than sufficient
Mechanical	6.8	11.6	18.1	>> Current knowledge level is likely more than sufficient
Design	5.2	10.2	21.0	>> Current knowledge level is likely more than sufficient
Telecommunications	3.9	8.4	4.2	<< Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Skills

Similarity of Focus Occupation to Associated Occupation: 47

**Focus Occupation:** Mechanical Engineers (17-2141)

**Associated Occupation:** Electrical and Electronic Engineering Technicians (17-3023)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Quality Control Analysis	5.9	8.8	11.1	> Skill level is likely sufficient
Troubleshooting	4.5	8.8	9.5	0 Current skill level may be sufficient
Repairing	3.4	8.0	3.6	<< Extensive development of skills in this area may be required
Equipment Maintenance	3.5	7.9	4.5	<< Extensive development of skills in this area may be required
Equipment Selection	3.3	7.0	6.5	0 Current skill level may be sufficient
Technology Design	2.6	4.9	11.0	>> Skill level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 87			
Focus Occupation: Mechanical Engineers (17-2141) Associated Occupation: Electrical and Electronic Engineering Technicians (17-3023)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Oral Comprehension	12.5	12.2	14.7	>	Current ability level is likely sufficient
Problem Sensitivity	11.1	12.0	13.6	>	Current ability level is likely sufficient
Written Comprehension	11.0	12.0	15.8	>>	Current ability level is likely more than sufficient
Near Vision	11.1	11.6	13.3	>	Current ability level is likely sufficient
Oral Expression	12.4	11.6	13.0	>	Current ability level is likely sufficient
Deductive Reasoning	10.6	11.1	15.8	>>	Current ability level is likely more than sufficient
Information Ordering	9.9	11.0	15.4	>>	Current ability level is likely more than sufficient
Written Expression	9.8	10.7	11.3	0	Current ability level may be sufficient
Finger Dexterity	7.6	9.9	7.1	<<	Extensive improvement in abilities may be required
Visualization	7.5	9.8	12.7	>>	Current ability level is likely more than sufficient
Visual Color Discrimination	6.4	9.6	9.1	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 80
<b>Focus Occupation: Mechanical Engineers (17-2141)</b> <b>Associated Occupation: Electrical and Electronic Engineering Technicians (17-3023)</b>		
Work Activities	Exclusivity of Activity	
Analyze engineering test data	71	
Analyze technical data, designs, or preliminary specifications	47	
Analyze test data	64	
Calculate engineering specifications	64	
Communicate technical information	4	
Confer with engineering, technical or manufacturing personnel	25	
Develop plans for programs or projects	31	
Draw prototypes, plans, or maps to scale	57	
Estimate cost for engineering projects	69	
Evaluate engineering data	60	

Examine engineering documents for completeness or accuracy	62
Follow manufacturing methods or techniques	73
Follow statistical process control procedures	73
Inspect facilities or equipment for regulatory compliance	51
Prepare technical reports or related documentation	22
Read blueprints	10
Read schematics	34
Read technical drawings	7
Resolve engineering or science problems	46
Test equipment as part of engineering projects or processes	67
Understand engineering data or reports	48
Use computer aided drafting or design software for design, drafting, modeling, or other engineering tasks	58
Use drafting or mechanical drawing techniques	50
Use robotics systems technology	78
Use scientific research methodology	21
Use technical information in manufacturing or industrial activities	67
Use technical regulations for engineering problems	61

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Tools and Technologies that Both Occupations Have in Common

Similarity of Focus  
Occupation to Associated  
Occupation: 65

**Focus Occupation: Mechanical Engineers (17-2141)**

**Associated Occupation: Electrical and Electronic Engineering Technicians (17-3023)**

Tools and Technologies	Exclusivity
Business function specific software	1
Cameras	2
Computer data input devices	2
Computer printers	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Development software	4
Electrical measuring and testing equipment	7
Electronic and communication measuring and testing instruments	14
Indicating and recording instruments	2
Industry specific software	1
Integrated circuits	18
Light and wave generating and measuring equipment	4
Machine tools	7
Mechanical instruments	14
Power tools	2
Soldering and brazing and welding machinery and supplies	6
Viewing and observing instruments and accessories	4

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.